Subject: MSD Colloquium, Thurs, 3/15, 11am, 212, A-157
From: Suzanne Kokosz <kokosz@anl.gov>
Date: Mon, 12 Feb 2007 15:52:08 -0600
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SPEAKER: Dr. Axel Hoffmann
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TITLE: Pure Spin Currents

DATE: Thursday, March 15, 2007

TIME: 11:00 a.m.

PLACE: Building 212, Room A157

HOST: Maria Iavarone

Refreshments will be available at 10:45 a.m.

Abstract: The new development of spintronics aims at utilizing the spin degree of freedom for electronic applications. To this date, in most investigated spintronics systems and devices, the spin and charge currents are generally in parallel and therefore directly coupled. However, using non-local geometries allows us to separate spin and charge currents, which enables the investigation of pure spin currents. Because spin-states are not necessarily conserved due to spin-flip scattering, they behave differently than charge currents. In particular this opens up the opportunity to transport spin information via exchange interactions instead of actual spin transport. Thus there is a possibility of significantly reduced dissipation for devices based on pure spin currents. In this talk I will review our own work on pure spin currents as well as alternative approaches to the generation of spin currents, such as spin Hall effects and spin pumping.